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Superfund Record of Decision:

Western Processing Site, WA

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(Please read Instructions on the reverse before completing)

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15. SUPPLEMENTARY NOTES

16. ABSTRACT

The Western Processing site occupies approximately 13 acres in Kent and King Counties, WA. Originally Western Processing was a reprocessor of animal byproducts and brewer's yeast. In the 1960's the business expanded to recycle, reclaim, treat and dispose of industrial wastes, including waste oils, electroplating wastes, waste pickle liquor, battery acids, flue dust, pesticides, spent solvents, and zinc dross. The facility is presently inactive and consists of 10 buildings in poor repair, a solvent recycling plant, a fertilizer-plant, 72 bulk storage tanks of varying capacities, drum storage areas with 2,000 partially filled drums and 3,600 empty drums, piles of flue dust, and battery chips. The soil and ground water samples confirmed that hazardous substances had been released into the environment. Among the more hazardous contaminants found on or below the site are chloroform, benzene, 1,2 -dichloroethane, trichloroethylene, phenol, arsenic, cadmium and cyanides.

The surface clean-up and stormwater control project is the first operable unit of the overall remedial action at the site. The main elements of the selected alternative include: characterize all materials identified for remova; removal of all bulk liquids, drummed liquids, and waste piles to a permitted off-site facility for disposal or incineration; removal and proper disposal of all transformers and substation equipment; demolition and removal to a permitted off-site facility of all on site buildings & dismantling of all on-site bulk storage tanks. Capital Cost $5.0 m

(Key words attached)

17. KEY WORDS AND DOCUMENT ANALYSIS

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Record of Decision Western Processing, Inc., WA Contaminated media: gw, soil Key contaminants: oils, acids, solvents, pesticides, VOCs, metals, TCE, DCE, arsenic, cadmium, cyanides		

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ENFORCEMENT DECISION MEMORANDUM

FIRST OPERABLE UNIT OF REMEDIAL ACTION SELECTION

Site: Western Processing Company, Inc., King County, Kent, Washington

ANALYSIS REVIEWED

I have reviewed the following documents describing the analysis of the cost-effectiveness for the Phase I remedial measures for the Western Processing Site.

1. Summary of First Operable Unit Remedial Alternative Selection at the Western Processing Site.

2. Draft Final Focused Feasibility Study for Surface Cleanup, June 4, 1984, by CH_2M Hill, and amended on June 15, in the Detailed Analysis Condeptual Design for Surface Cleanup.

3. Proposal for Surface Remedial Activities, prepared by Chemical Waste Management, Inc., ENRAC Division, June 26, 1984, for Western Processing Coordinating Committee.

4. Memorandum dated July 12, 1984, from Robert G. Courson to Jerry Schwartz and Madeline Nawar on Recycling of Liquids from WP during PRP removal.

5. Memorandum dated June 22, 1984, from George Hofer to Judi Schwarz on CSSI Facility in Arlington, OR.

DESCRIPTION OF SELECTED ALTERNATIVE

The main elements of the selected alternative include:

I. On-site and perimeter monitoring of air quality during remedial activities.

II. Removal of all bulk liquids, drummed liquids, and waste piles to a permitted off-site facility for disposal or incineration.

III. Removal and proper disposal of all transformers and substation equipment.

IV. Demolition and removal to a permitted off-site facility of all on-site buildings.

V. Dismantling of all on-site bulk storage tanks. If tanks are determined to be structurally sound, such tanks will be thoroughly cleaned and sold for scrap metal.

VI. All other surface debris will be removed and disposed.

VII. Stormwater will be controlled and treated prior to discharge before, during, and after the surface cleanup. After the initial pond removal, an on-site treatment plant will be set up and operated.

Each solid waste pile shall be removed down to the existing grade level at the site location on which it was situated. The exception will be the accumulated "gyp" pond pile. Up to 750 cubic yards of soil below existing grade level will be removed in addition to the pile itself. This depression will form a storm water accumulation area for use subsequent to the surface cleanup. Adjacent areas to the South will be graded to provide drainage to the area. The estimated cost for total response action is reported to be approximately $9 million.

DECLARATION

Consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), and the National Contingency Plan (40 CFR Part 300), I have determined that the above remedial measures for the Western Processing Site will effectively mitigate and minimize damage to, and provide for current and future protection of public health, welfare and the environment. The State of Washington has been consulted and agrees with the selected remedy.

I have also determined that the action being taken which includes the off-site transport of contaminated materials to a RCRA approved facility is the least costly alternative when compared to the other remedial options reviewed, and is necessary to protect public health, welfare, or the environemnt.

8/5/84
Date

Lee M. Thomas,
Assistant Administrator
Office of Solid Waste and
Emergency Response

SUMMARY OF FIRST OPERABLE UNIT REMEDIAL ALTERNATIVE SELECTION AT
THE WESTERN PROCESSING COMPANY, INC. SITE,
KENT, WASHINGTON

SITE LOCATION AND DESCRIPTION

Western Processing Company, Inc. is located at 7215 South 196th Street in Kent, King County, Washington. The facility covers approximately thirteen acres in Section 1, Township 22 North, Range 4 East (WM). The general area around the site is rapidly developing for commercial and industrial purposes although there is a limited amount of agricultural and residential use in the vicinity. One family lived across the street in a rented house until May 1984. A vicinity map is provided as Figure 1; a site map is provided as Figure 2.

The site is flat and lies in the flood plain of the Green River, which drains to Puget Sound. Mill Creek abuts a portion of the western boundary of the site, and eventually reaches the Green River. Surface runoff from the site reached Mill Creek both directly and indirectly, through seeps, springs and surrounding drainage ditches.

Underlying the site is an aquifer, the upper limit of which ranges from three to twelve feet below the surface. Deeper portions of this aquifer underlie a discontinuous set of clay lenses, to a depth of at least 170 feet. A deeper artesian aquifer may exist below an undefined thickness of confining layers of silt and clay in the vicinity of the site. There are no wells currently used for drinking water within a one mile radius of the site, but the City of Kent (population 27,000) has drilled wells into the deeper portions of the aquifer less than a mile from the site in an attempt to develop a drinking water supply for the city. Other wells have withdrawn water for domestic use from the shallower aquifer in the past.

The ground water system is complex. While the regional groundwater flow direction is generally north and west, a groundwater "mound" beneath the site creates radial, and possibly downward, flow from the site, and may have created a hydraulic head driving contaminated groundwater down into lower portions of the aquifer. The native soils are generally of moderate to low permeability, though the fill materials on the site are generally highly permeable.

The facility presently consists of 10 buildings, including a small laboratory , a solvent recycling plant, a fertilizer plant, at least 72 bulk storage tanks of varying capacities, several drum storage areas which still contain at least 2000 non-empty drums, piles of flue dust, battery chips, and over 3,600 empty drums, construction debris, a system of concrete surface impoundments, and berms and fences. The buildings and other items are in poor repair. Approximatly 2 acres of the site are newly paved, covered, and bermed from Washington Department of Ecology (DOE) activity in October 1983. A two acre-feet stormwater lake has accumulated in the typographic low spot in the center of the site because the owner/operator's illegal discharges of untreated stormwater to Mill Creek have ceased.

SITE HISTORY

From 1953 to 1961, the site was leased from its then current owner and developed and used as a U. S. Army Nike Anti-Aircraft Artillery facility. In 1961, the property was sold to Western Processing Company, Inc, which had been founded by Garmt J. Nieuwenhuis in Seattle in 1957. Western Processing Company is still owned and operated by Mr. Nieuwenhuis, though over the years his wife, son, and at least one other person have been officers of the corporation at various times.

Originally Western Processing was a reprocessor of animal byproducts and brewer's yeast. In the 1960's the business expanded to recycle, reclaim, treat and dispose of many industrial wastes, including waste oils, electroplating wastes, waste pickle liquor, battery acids, steel mill flue dust, pesticides, spent solvents, and zinc dross. Some of the Pacific Northwest's largest industries, such as the Boeing Company, had contracts for Western Processing to handle their wastes.

Operations included heavy metals recovery, waste solvent recovery, acids and caustics neutralization, chemical recombination to produce zinc chloride and lead chromate, reclamation of ferrous sulfide in fertilizer production, electrolytic destruction of cyanides, reclamation of metal finishing byproducts, and pickle liquor reprocessing.

Reviews of historical aerial photos disclose great changes in the site's uses and structures every few years as Western Processing's operations changed. Reproductions of some of these photos are attached as Figures 2, 3, and 4. In addition, it is believed that the original ground level was covered and raised by the materials added to the site. The aerial photo in Figure 3 shows the site shortly before it was closed down.

The Kent Fire Department was one of the first agencies to have contact with Western Processing when fires in the early 1970's brought the conditions at the site to their attention. The Washington State Department of Ecology (DOE), and its predecessor agency, the Pollution Control Commission, have monitored and attempted to control wastewater discharges from Western Processing for many years. Discharges were regulated by permit until late 1981. At that time Western Processing had failed to construct wastewater discharge control facilities as required by permit, and, in 1982, elevated metals concentrations were detected in Mill Creek adjacent to the site. In August 1982, the King County Superior Court, acting on a DOE motion, issued an order prohibiting further discharges of zinc contaminated water from Western Processing into Mill Creek. The company was ordered to partially close and to remove zinc-laden wastes from the site at that time. The company appealed this order and the issues are still outstanding in state courts. Several other local agencies, including the Puget Sound Air Pollution Control Agency, and the Seattle-King County Health Department have or have had pending regulatory actions or concerns with the company.

EPA's first major regulatory involvement with Western Processing came through the RCRA program. (In the late 1970's SPCC actions had been taken by EPA against the company.) EPA inspected the site in March 1981 to determine compliance with the newly-effective regulatory scheme of RCRA. Many violations were documented. Although the company notified EPA of its hazardous waste activities prusuant to RCRA Section 3010, an administrative order in May 1981 and substantial negotiations thereafter were necessary to convince the company to submit a Part A application. (The company claimed that as a "recycler" they did not have to comply with RCRA.) Subsequent negotiations between Western Processing and EPA resulted in little progress toward correcting the violations. EPA issued a second compliance order in June 1982, after another inspection in May 1982 revealed additional significant violations and questionable site management. This second order assessed a $210,000 civil penalty. In February 1983, EPA filed suit in Federal District Court seeking, inter alia, injunctive relief and civil penalties concerning the RCRA violations. This case has since been admended to include CERCLA counts against the owner/operator of the site.

As a follow-up to the earlier State and local stream surveys for metals, in May 1982, EPA conducted a stream survey around Western Processing. Twenty-six priority pollutants were found in the surface waters around the site, all of which were subsequently found on-site. In July 1982 the site was added to the National Priorities List.

In August 1982, EPA issued a RCRA 3013 order to the site owners/operators to investigate the effects of their past practices on soil, surface water and groundwater. When the owners/operators did not comply (due to alleged financial inability), EPA undertook the investigation and ordered them to reimburse the Agency for its expenses.

The investigation, which entailed the drilling of 32 on-site wells and six off-site wells from 15 to 30 feet deep at 30 locations, began in September 1982 and concluded in November. In all, 130 soil samples were taken and 35 groundwater samples were obtained from the wells.

The analyses of these samples confirmed that hazardous substances had been released into the environment, had been leached into and contaminated the subsurface aquifer, and had caused widespread contamination of the soils at the site. Samples of groundwater beneath the site contained 32 priority pollutants, of which eight are carcinogens. Soil samples on and beneath the site contained 49 priority pollutants, of which nine are carcinogens and twelve more are suspected carcinogens. Water and sediment samples taken from Mill Creek contained 41 priority pollutants, of which 11 are carcinogens and 8 more are suspected carcinogens. Tests showed that hazardous substances had spread throughout the aquifer beneath the site and its environs to a depth of at least 170 feet and throughout the soil beneath the site to a depth of at least 15 feet. At least 19 of the soil samples and six of the groundwater samples were defined as hazardous wastes by the standards of RCRA regulations. Among the more hazardous

contaminants found on or below the site are chloroform, benzene, 1,2-dichloroethane, benzo-a-anthracene, benzo-b-fluoranthene, trichloroethylene, phenanthrene, naphthalene, fluorene, chrysene, pyrene, trans-1,2-dichlorethene, 1,1,1-trichloroethane, toluene, phenol, arsenic, chromium, cadmium, lead, mercury, and cyanides.

When preliminary results of the Fall 1982 investigation became available in early April 1983, EPA issued a CERCLA Section 106 order requiring the owners/operators to cease operations immediately and to provide assurances that they would and could clean up the site. When the assurances were not made, EPA used Superfund money to conduct an immediate removal.

The immediate removal began in late April 1983 and was completed on July 1, 1983. The removal project cost $1.4 million. The purpose of the project was to eliminate the extremely high hazards of the site and to stabilize the site as much as possible to prevent additional degradation of the soil and groundwater. Table 1 is a summary of the material taken from the site. Large quantities (920,000 gallons plus 1,944 cubic yards) of the most hazardous substances on the site were removed. Attempts were made to find users for the materials, but most were sent to approved hazardous waste disposal sites. Many other hazardous substances were stabilized and left on the site.

Once the emergency removal was completed, EPA went back to court to ensure that the owner/operator would not start up operations which could undo the work which had been done. A preliminary injunction was issued which prohibits the owner from receiving or processing materials, gives EPA and its representatives site access, and which required EPA's prior approval for all activities the owner/operator may wish to perform on the site. The judge also specifically found that the site was an imminent and substantial endangerment to the environment.

Stormwater management was going to continue to be a major problem until the site was completely cleared and cleaned. Using State funds, DOE implemented a stormwater initial remedial measure involving excavation of the gypsum sludge pond, restacking and covering the material, and paving a 2 acre portion of the site. A cooperative agreement for a stormwater IRM to handle stormwater control over a larger portion of the site was signed in December 1983, but the project was put on hold when the bids came in much higher than the available budget.

Table 1

MATERIALS REMOVED FROM THE WESTERN PROCESSING SITE
DURING THE APRIL - JULY 1983 IMMEDIATE REMOVAL

1. SOLIDIFIED PAINT SLUDGES/FLAMMABLES

   1,900 cubic yards

2. FLAMMABLE LIQUIDS IN BULK AND DRUMS

   59,000 gallons

3. COMBUSTIBLE LIQUIDS IN BULK

   85,000 gallons

4. RECYCLED SOLVENTS

   25,000 gallons

5. CORROSIVE LIQUIDS IN BULK AND DRUMS

   50,000 gallons

6. NON-CORROSIVE OXIDIZERS IN DRUMS

   660 gallons

7. PCB LIQUIDS AND PCB CONTAMINATED MATERIALS

   127 drums

8. WASTE WATER FROM PONDS

   250,000 gallons

CURRENT SITE STATUS

The Section 3013 study described above in the Site History section confirmed that hazardous substances had been released into the environment, had been leached into and contaminated the aquifer beneath the site, and had caused widespread contamination of the soils at the site.

Table 3 includes a list of the wastes still on the surface of the site. The materials identification and classification task of the focused feasibility study for the current surface clean-up project identifies 28 classes of materials still on the site. Volumes for the various wastes were estimated from previous information and a field reconnaissance done during the past two months.

A recent aerial photo (Figure 4) displays the current condition of the site.

The onsite drums vary from 2000 full drums stacked on pallets to 6,000 empty drums stored randomly in piles. The condition of the drums ranges from good (ie, perhaps structually suitable for transporting offsite) to currently leaking.

The tanks holding approximately 500,000 gallons of fluids and sludges have no current evidence of leakage, though some minor leaks were noted during the past winter. The tops of some tanks are unstable or non-existant.

The waste piles of approximately 3,000 cubic yards of battery chips and approximately 2,000 cubic yards of flue dust are uncovered, though the new gypsum pile has an engineered plastic cover top and bottom. The battery chips and flue dust contain significant quantities of leachable lead and zinc.

Approximately 2 acre-feet of water has accumulated in the center of the site because of a naturally occurring low point in the site topography and the ceasation of the owner's illegal discharges which used to keep the site drained.

Miscellaneous equipment and debris, including 4,000 used wooden pallets, are scattered throughout the site.

The 10 buildings are in generally poor condition.

The exact lateral and vertical extent of the subsurface contamination is now being determined. Tests to date show that hazardous substances have spread throughout the aquifer beneath the site and its environs to a depth of over 100 feet and throughout the soil beneath the site to a depth of at least fifteen feet. Additional soil boring and well construction activities are being conducted to further define the extent of contamination. Preliminary results lead the region to believe that widespread surface soil contamination exists to the north and west of the site.

Contaminants can and probably are continuing to leave the site through a variety of pathways. While the native soil is of moderate to low permeability, fill material on the site is generally very permeable and the depth to groundwater is shallow - as little as 6 to 10 feet. As far as can be determined, this shallow aquifer is not currently used as a source of domestic water in the area, though several old wells have been located. A large percentage of the population in the area is served from wells drawing from the deeper aquifer.

Except in the newly paved clean area, hazardous materials can easily enter the soil column, groundwater, and through nearby seeps and springs, the surface water. Fugitive dust containing high concentrations of lead, zinc and other metals has been collected across the street from the site. The zinc, and other contaminants in the stream have left the stream largely devoid of aquatic life in recent years.

Direct contact with contaminated materials from the site may be occuring both on and off the site. The surrounding area is rapidly being developed for industrial and commercial uses, including those plots generally downwind from the site. A jogging path is adjacent to the site to the east. A family which includes a young child resided across the street from the Western Processing gate until May 1984.

On-site access is restricted to EPA and state employees and contractors, and to persons whom the owner authorizes access. EPA has maintained a daily to weekly surveillance of the site since July 1983.

ENFORCEMENT

Reports submitted by Western Processing to EPA and state agencies, as well as Western Processing business records obtained as part of the Section 106 administrative order, were used in the spring and summer of 1983 to identify over 300 generators and transporters who contributed material to Western Processing. 225 notice letters were sent in May and June 1983, with an additional 100 notice letters sent in October 1983. These letters notified the generators and transporters that they may be liable for all monies spent by the government and requested answers to five questions regarding their shipments to Western Processing within 30 days. Responses to EPA's notice/Section 104e letters gave EPA the names of some other potentially responsible parties (PRPs) as well as enlarging the information base available to EPA on specific shipments.

The period following the notice letters also provided an oportunity to educate the PRPs about the seriousness of the problems at the site and their responsibilies under CERCLA as generators and transporters.

The first large meeting with the PRPs took place on January 11, 1984. After the government's presentation was completed, the PRPs took the oportunity to begin to set up an organizational structure. Preliminary negotiations/talks continued with an ad hoc PRP committee until May 1984. These preliminary talks primarily concerned exchange of information, and EPA's plans.

The extensive computer data base put together by EPA's contractor Techlaw/Intera has been used to provide information to the PRPs. A transaction listing has been sent to individual PRPs only after EPA receives a signed affividat stating the PRP has searched their files, has provided a summary of all relevant information to EPA, and will give EPA reasonable access to the original information. A list showing the total quantities taken to the site by each PRP has been provided to all PRPs and is being used by the PRP committee to apportion costs. This data base has also been invaluable in resolving issues of whether we have correctly identified a particular PRP.

EPA's and DOE's decision to move forward and ensure that the surface of the site is cleared during the summer of 1984 was the impetus which accelerated the pace of negotiations. On April 11,1984 a letter was sent to all PRPs stating that the PRPs had until June 18, 1984 to agree to undertake the surface clearance or the government will do it and seek cost recovery. In early May, the PRPs met among themselves and set up a coordination committee as well as special subcommittees. On May 30, 1984, a proposed plan for surface clearance which had been approved by the PRPs technical subcommittee, was presented to the government. On June 19, 1984 agreement in principal on the concent decree was reached between the government and the participating PRPs. The PRPs intend to start work before the consent decree has been accepted by the courts in order to take advantage of the summer's drier conditions.

ALTERNATIVES EVALUATION

The objectives of this surface clean-up project, a first operable unit of the remedial action are:

1. Eliminate or reduce the threat of release of additional hazardous substances into the surface water, groundwater, soils and the air.

2. Prevent or eliminate direct contact hazards for the people who must go on the site for remedial investigation and site surveillance activities, and for potential fire or emergency response actions.

3. Allow the design and implementation of additional and more wideranging and effective stormwater control to reduce the release of hazardous substances into the ground and surface water.

4. Prepare the surface of the site during this construction season so that the subsequest remedial actions on the site can begin earlier and possibly be completed during the next construction season. Subsequent remedial actions will consider groundwater, subsurface and off-site contamination.

Identification of surface clean-up remedial action alternatives

The PRPs submitted a surface clean-up plan to the government on May 30, 1984. The same week, a Focused Feasibility Study (FFS) was completed by CH2M Hill and released to the public. The PRP plan and the FFS both came to similar conclusions as to the feasible and cost-effective alternatives for the surface clean-up. All alternatives are source control measures. This discussion of alternatives is based on the FFS only.

The objective of the FFS was to use the critiria outlined in the National Contingency Plan to determine the alternatives with the greatest feasibility of application at Western Processing. For a first step, remedial action alternatives for each of the 28 categories of wastes described above were developed on a waste-by-waste basis. The alternatives were selected for evaluation if they could apply to the waste types identified at Western Processing, could be used cost effectively with the volumes of each waste currently onsite, could be implemented during this construction season, and were a proven technology. The types of alternatives that met these first criteria are listed in Table 2 and are described below.

1. No Action

An alternative considered for all waste materials on the Western Processing site was that of "no action". This option was not considered to be a feasible alternative for any of the hazardous or liquid materials on the site.

No-action was deemed to be an unacceptable alternative for any type of drummed or tanked liquid waste, because of the high probability that additional surface water or groundwater pollution eventually will occur if liquids are allowed to remain onsite. Many drums and tanks are already in poor condition, additional deterioriation is certain to happen with time. In addition, accidents or vandalism of the drums or tanks could occur. If these materials spill on the ground as a result of container failure, surface and groundwater pollution will undoubtedly occur.

Many of the solid materials on site either contain leachable or particulate sized hazardous substances or are contaminated by hazardous substances. No action for these materials is unacceptable because they will continue to be a source of release of hazardous substances to the environment, particularly the groundwater.

A major problem with leaving anything on the surface of the site is that it would interfer with achieving two of the goals of the remedial action. First, materials on the surface of the site would interfere with the implementation of a better stormwater control program. Second, because the soil is very contaminated, all materials will have to be removed from the surface of the site for the second phase of the remedial action, which is planned to begin next year.

2. On site Treatment

The Western Processing site contains contaminated water resulting from previous cleanup operations and from rainwater falling on contaminated surfaces, such as in empty tanks and on the ground surface. More contaminated water will be generated over the summer from additional rain and decontamination water. One option for removing this waste is to treat it on-site in order to remove most of the contaminants and then discharge the water to the sewer or the Mill Creek. Mobile treatment equipment is readily available for this type of cleanup operation. This alternative will be part of the aqueous waste removal and the storm water control project.

3. Offsite Treatment

Several aqueous wastes located on the Western Processing site are be suitable for offsite treatment and disposal. The water is contaminated with low concentrations of heavy metals, as well as a wide variety of organic contaminants. Several offsite treatment facilities in the local area are capable of treating this water to remove the metals and organics, making it suitable for discharge to the sewer or surface water. In addition, these facilities are equippted to neutralize corrosive materials for discharge. This alternative is proposed for the initial removal of the stormwater currently ponded on site.

4. Non-hazardous Waste Landfill

The Washington State Solid Waste Management, Recovery and Recycling Act assigns local governments the responsibility for handling the disposal of solid wastes. Local health departments are assigned the enforcement function subject to standards established by the State Department of Ecology (Minimum Functional Standards for Solid Waste Handling--Washington Administrative Code 173-301) or standards adopted by the local health department of equivalent or greater stringency. King County contains landfills operated by the County, the City of Seattle, small municipalities, and private industry. None of these landfills accepts wastes classified as dangerous by the State. None of the landfills in Snohomish County (north of King County) or Pierce County (south of King County) accept dangerous or hazardous wastes.

The various landfills all have different specifications regarding the acceptable levels of contamination, size, and physical properties of the wastes they will accept. In addition each may arbitrarily decide not to accept any particular waste. Most of these landfills have vocal local citizen groups monitoring their operations.

Solid materials which are suitable for clearing, such as tires, may be disposed of in these local landfills. Other, more porous materials, such as pallets and certain building materials, were determined not to be suitable for disposal in the non-hazardous landfills. The testing and cleaning costs, combined with the uncertainty of the materials ever being allowed into the landfills, result in this not being a reliable and feasible alternative.

5. Hazardous Waste Landfill

Most of the materials on the surface of the Western Processing site are substances that cannot be recycled and that have contaminants high enough to be designated by the WDOE Dangerous Waste Regulations (WAC 173-303) as dangerous or extremely hazardous and thus must be treated or disposed of by an approved treatment, storage, and disposal (TSD) facility.

Under the EPA hazardous waste regulations, hazardous waste landfills are designated as one type of TSD facility. Hazardous waste in the State of Washington can be stored and disposed of by two types of facilities: dangerous waste landfills and extremely hazardous waste landfills. There are currently no dangerous waste landfills in Washington that could accept waste such as has been identified at Western Processing, nor does Washington have an extremely hazardous waste landfill. Currently, dangerous and extremely hazardous wastes in Washington are sent out of state to EPA-approved hazardous waste landfills, the closest being in Arlington, Oregon.

This alternative is the recommended alternative for most of the waste types found on the Western Processing site.

6. Discharge to Metro

The Municipality of Metropolitan Seattle (Metro) is the agency responsible for the sewage treatment activities and water quality monitoring in King County. Metro operates and maintains the sewage treatment plants (and main trunk sewer lines) in King County. The cities around Seattle are responsible for the lines entering Metro's trunk lines and for issuing permits for sewer hookups. Each city in turn must meet Metro's requirements. Metro's Industrial Waste Section issues discharge permits and monitors industrial companies discharging into the system. The Industrial Waste section also has enforcement authority and issues fines to companies that do not conform to their discharge permit requirements.

Discharge from Western Processing would flow to Metro's Renton secondary treatment plant and subsequently be discharged into the Duwamish River. Metro's Renton treatment plant has an NPDES permit from the EPA for its discharge into the Duwamish River. Factors controlling the dischharge to the Metro system include Metro's compliance with its WDOE NPDES permit, the Renton plant's treatment capabilities, and safety factors for maintaining the sewer lines. These factors force strict limitations on the maximum levels of contaminated, dangerous, or hazardous wastewater discharged into the Metro's system.

This alternative may be part of the aqueous waste removal and stormwater control project.

7. Discharge to Mill Creek

This alternative may also be part of the aqueous waste removal and stormwater control project. An NPDES permit issued by WDOE must be obtained and the wastes treated to the permit discharge criteria. The regulations in the permit will cover basic EPA requirements as well as any more stringent requirements that might be imposed by state or local agencies.

8. Incineration/Fuel Source

A portion of the hazardous materials stored at Western Processing are flammable and could be destroyed by commercial hazardous waste incineration. Hazardous waste incineration is the process of burning the material in a high-temperature furnace with a long residence time. The units are usually equipped with a caustic scrubber to remove particulates and acidic gases. CH2M Hill, as part of the FFS, was unable to locate any commercial hazardous waste incinerators in the Pacific Northwest.

An alternative to commercial hazardous waste incineration of these wastes would be to burn them and recover their fuel value. There are, however, a number of limitations in the types of acceptable combustion devices available and the suitability of materials onsite for use as fuels. For example, some of the "synfuels" are contaminated with methylene chloride. Some of the "synfuel" materials, if still pure "oxazolidone", may be suitable for incineration at a cement kilm in California. The original generator of this "oxazolidone" currently disposes of this waste at this kilm.

A third alternative would be ocean incineration. The At Sea incinerator ships are being constructed in nearly Tacoma, Washington. However, there have been many delays in At Sea's clearance for a test burn. The FFS did not recommend this alternative because of timing and regulatory uncertainities.

9. Recycle/Reuse

The Western Processing site contains some waste materials that could be recycled or resued. Solids in this category include pallets, empty drums, empty tanks, scrap steel, and zinc oxide, among others. Most liquids that potentally could be recycled were removed from the site during the immediate removal last summer. The owner of the site has sold or removed much of the zinc material to foreign and domestic recyclers since last summer. Both the FFS and the PRPs plan include selling off any tanks which are still sound and that can be properly cleaned. Some of the sludges at the bottoms of the tanks may not be easily removable.

However, there are some major limitations on recycling the materials from this site. Based on the testing completed to date, it appears that most wastes onsite are cross-contaminated with other wastes. The operational practices of Western Processing apparently involved mixing different wastes to obtain a resultant product. In addition, the storage practices of Western Processing would also likely cause cross-contamination.

In the processing of performing the FFS, CH2M Hill contacted virtually every possible reputable recycler or reuser of material from Western Processing. In these contacts there were three consistant issues. The local recyclers are not interested in taking any of the wastes from Western Processing unless 1) the material is thoroughly characterized, 2) the material is highly uniform, 3) EPA will quarentee them freedom from any liability and will assure payment of any losses, and 4) there is absolutely no publicity. These are not conditions that can be met.

10. Detonation

Detonation is applicable only to those wastes that are explosive or potentially reactive. The only wastes that might be explosive in nature are selected laboratory chemicals. For these wastes, detontation is likely to be the only acceptable disposal alternative.

11. Containment

In some instances hazardous materials on the Western Processing site could perhaps be stabilized and left on the site. Under this alternative the hazardous waste would either be treated to render it nonhazardous and then incorporated into the site closure plan, or would be left untreated for final closure if the contaminants were solids and less hazardous than the underlying soils.

A major problem with this alternative is that these materials would still be a in the way for any stormwater control plan as well as for the next phase of site clean-up. Significant regulatory hurdles exist because DOE has a hazardous landfill moratorium until 1986. The non-uniformity and cross-contamination of wastes also make this alternative unrealiable.

12. Return to Manufacturer

For materials onsite that are still in original, unopened, and undamaged containers, it might be possible to return the material or product to its manufacturer. This option is not feasible for wastes that were generated onsite by combining the incoming materials. Specific wastes that might meet this criteria include:

- Flectovarathane wood treatment products located on the pallets near the entrance to the facility
- Drums of foaming agent located near the southeast corner of the facility

The manufacturers of these substances (also known as the generators) have not made any serious steps to try and get these items off the site. They have had over a year to do so. Also, the containers are not generally damaged by the weather and thus can no longer be sold as new product.

13. Release to Responsible Party

For wastes whose responsible parties can be clearly identified, consideration was given to encouraging the responsible party to remove and treat the waste at their own expense. Only one PRP is actively pursueing this option at this time for it's "oxazolidone". With this consent decree now negotiated, it is up to the PRP to negotiate an acceptable arrangement with the PRP committee.

Application of alternatives to particular wastes

In the FFS, the application of these alternatives to the specific waste types was done in two steps. The first step used qualitative engineering, economic, environmental, and institutional factors to eliminate less feasible remedial actions. The engineering considerations included technical feasibility, demonstrated application and reliability, consistency with project needs, safety, schedule, and logistics. An economic analysis was done on an approximate-cost basis and included capital, operation and maintenance, and total costs. The environmental considerations included short- and long-term environmental impacts and public health effects. The institutional factors consisted of permit requirements, contract negotiation, and risk potential.

The second level of screening considered costs in a more quantitative manner through the use of order-of-magnitude costs. These costs compared the potential value of recycling and reuse (as fuels) versus the cost of sampling and classifying the wastes enough to determine their value. Because the site is often unworkable once the rainy season starts,

schedule was also a screening criterion. Disposal of the materials as hazardous waste was the baseline against which all alternative actions were measured.

Table 3 shows the results of this screening. Several of the initial alternatives were combined to provide a particular feasible alternative for a particular waste. For example, on-site treatment (cleaning) may be necessary before drums, tanks and other metal items can be recycled. Water treated on-site would be discharged to the Metro system or Mill Creek.

All alternatives surviving this second level of screening are intended to fully comply with all Federal and State environmental laws and regulations, though compliance is easier to demonstrate with some alternatives such as disposal of all materials at a hazardous waste landfill.

Based on the limited testing completed to date, it appears that most wastes onsite are cross-contaminated with other wastes. The operational practices of Western Processing apparently involved mixing different wastes to obtain a resultant product. In addition, the storage practices of Western Processing would also likely cause cross-contamination. This cross-contamination affects the selection of the feasible and appropriate remedial actions. Local recyclers are not interested in taking any of the wastes unless: the material is thoroughly characterized and is highly uniform; EPA will quarantee freedom from liability and payment of losses, and absolutely no publicity. These are not conditions EPA can meet. The reputation of the site and the frequent cross-contamination also affects the feasibility of disposal in non-hazardous waste landfills and incinerators.

Identification of stormwater control remdial action alternatives

In the September 1983 focused feasibility study for stormwater control, the feasible alternatives were greatly limited by the presence of the various wastes, their containers and the buildings. For example, regrading the central and southern portions of the site were not possible. Their removal from the Western Processing site will result in a site where stormwater (surface water) will be easier to manage and control.

A continuing major concern will be the release of water which has become contaminated through contact with and leaching through the heavily contaminated soils on the site. The stormwater control actions are intended to prevent the release of additional hazardous substances into the environment until the subsurface remedial action is under construction.

The alternatives considered by EPA for stormwater control included:

* Grade the site to collect the water, transfer the water to an offsite treatment facility, treatment, and discharge to Metro.

* Grade the site to collect the water, on-site treatment, and discharge to Metro.

* Grade the site to collect the water, on-site treatment, and discharge to Mill Creek.

* Grade the site, place an interim impervious cap on the site, and discharge to Mill Creek without treatment.

* Grade the site to collect the water, no treatment, water discharge by percolation and evaporation only.

* No action.

The alternative proposed by the PRPs is to grade the site to collect the water, on-site treatment, and discharge to Metro or Mill Creek. The initial removal of the ponded water already on-site would be by collection, transfer to an off-site treatment facility, treatment and discharge.

All alternatives, except for possibly the no action and discharge by percolation and evaporation alternatives, would comply with all other Federal and State environmental laws. For these two alternatives in a worst case situation, such as an extraordinarily long period of rain or berm instability, the capacity of the current ponded area could be exceed and water would be discharged to Mill Creek not in compliance with a NPDES permit. An immediate removal measure would then be necesssary to transfer the water to an off-site treatment facility for treatment and discharge.

EPA's screening process included technical feasibility and reliability, public health and environmental concerns, institutional concerns, public acceptable, and cost effectiveness.

Prior analysis had shown that the treatment options were very expensive and they had been screened out at the early stages of the September 1983 FFS. However, a number of new facts and situations have made it worthwhile to consider again. The results of recent sampling has shown the stormwater to potentially require less treatment than previously anticipated. The need for, and level of, treatment and the selection of the discharge point (Metro or Mill Creek) will depend on the quality of the water before and after treatment, and the regulatory requirements. Another different situation is that the waste removal activities described above may well involve some type of onsite treatment with discharge to Metro for the water based wastes. Therefore there may now be an economy of scale.

Discharge to the Metro sanitary sewer would have be an interim solution. Discharge of stromwater to the sanitary sewer system is not desirable since it adds to the "wet weather" flow depends on an already overloaded system. However, for Western Processing, the on-site ponding could buffer the flow peaks. Discharges could be scheduled for times when the flow in the Metro system is not at a peak.

Discharge to Mill Creek could be a less costly alternative than discharging to Metro if the NPDES permit requirements can be established in a timely manner. Processing of similar permits is taking up to 180 days currently. The on-site treatment process would be similar for discharge to either Metro or Mill Creek.

In the past, the state has used their discretion in whether to issue an NPDES permit when only clean stormwater is being discharged to Mill Creek. An impervious cap with discharge of the untreated but non-contaminated stormwater to Mill Creek is the current condition in the two acre project the Washington DOE constructed on the site last fall. While the capital costs are higher than the on-site and off-site treatment alternatives, the O&M costs are significant lower. Since subsurface cleanup is planned for next year, these higher capitol costs are not justified.

From a public health and environmental protection consideration, the three alternatives described above would have similar impacts. None of the three would have significant adverse impacts. All three would reduce the environmental and public health and welfare impacts of the Western Processing storm water. All three would take advantage of a site now cleared of surface obstructions while minimizing the discharge of hazardous substances to both surface and subsurface water.

The no action and the discharge only through percolation and evaporation alternatives are very similar. The central and southern portions of the site currently discharge only through percolation and evaporation. The primary difference between these two alternative is how water will be dealt with in the north end of the site, the amount of on-site storage which could be available, and the permeability under any new potential pond areas.

The no action and the discharge only through percolation and evaporation would also have similar public health, welfare and environmental impacts. The continued ponded of water on the site will continue to restrict investigations and future subsurface clean-up of the site. Stormwater would continue to become contaminated and would continue to recharge the groundwater in the local area, and would perhaps continue to exaggerate the "mounding effect." Contaminated stormwater would continue to reach Mill Creek through seeps and springs. However both these alternatives have potentially much lower capital and O&M costs than the first three alternatives.

COMMUNITY RELATIONS

A community relations program has been in place for almost a year. Both DOE and EPA take an active role in this plan. The major elements have included: monthly interagency meetings with the Kent City Mayor and her staff; public presentations/meetings whenever the city or city council has requested it; press releases at all major events, such as the release of data or reports, or the start of particular on-site activities; wide distribution of press releases and fact sheets; and the availability of government staff by phone to respond to questions from the public. Though public interest was very high last summer during the emergency removal, for the last eight months only a few individuals and the City of Kent have evidenced their continued interest.

In early June 1984, a press release, a fact sheet, and the Focused Feasibility Study was made available to the public. Over 300 press releases and fact sheets were sent out. Over 50 copies of the Focused Feasibility Study were sent out to individuals and agencies known to be interested in the site, and six copies were made available through the local public and EPA Regional libraries. In addition, copies were available free from EPA for the asking. The three week comment period closed on June 22, 1984.

A well-attended public meeting was held using the City of Kent's Workshop forum on June 11, 1984. Besides the city council and staff, only four other persons spoke. Most comments addressed the speed (too slow over all, too fast on this first operable unit) and scope (why can't the entire off-site and subsurface clean-up be done now too) of the proposed action, as well as the reputation of the PRPs rumored contractor (Chemical Waste Management, Inc.). As of June 22, only one additional written comment had been received, in which Metro clarified it's proposed discharge requirements. No comments were received which addressed the details of the proposed action or the proposed disposal locations or methods, except for one person who wanted EPA to try his new glass-making idea.

Because active negotiations were underway, EPA did not release any details of the PRP's plan, except to say that the PRP plan was similar in it's final result. Because the DOJ public comment period will begin after the PRPs initiate the clean-up, the PRPs are taking the initiative to set up small meetings with interested individuals and organizations. Most of these meetings are scheduled for the week of June 25.

CONSISTENCY WITH OTHER ENVIRONMENTAL LAWS

The alternatives described above will comply with all Federal, State and local laws and regulations. Environmental laws which could apply to this action include:

RCRA. This program has been delegated to the State of Washington. On-site activities will comply with state regulations. DOE expects to have a representative on-site at all times to ensure compliance.

Off-site disposal of hazardous and dangerous waste will have to occur out-of-state. The nearest facility which can take a majority of the materials from the site is the CSSI site in Arlington, Oregon. The Oregon Department of Environmental Quality has been delegated interim authorization under RCRA. DEQ's last inspection of the Arlington facility was on May 30, 1984. No violations of state licence conditions were noted by the State. EPA is currently reviewing the facility's Part B application.

The cost of proving that a particular waste is not hazardous under federal or state regulations (or of cleaning the waste and then proving it is not hazardous) is often higher than disposal at a hazardous waste dispoal facility. Lower levels of proof, while then allowing additional recycling or potentially disposal at municpal landfills, would probably not be publicly acceptable.

TSCA. TSCA would apply to the handling and disposal of all PCB contaminated materials. All TSCA procedures will be followed.

CWA. The Clean Water Act will apply to the disposal of certain liquids on the site, the disposal of the ponded stormwater on the site, and the disposal of stormwater after the site is cleared. The alternatives for the disposal of the liquids on the site and the already ponded water are either to treat the water on site or to take the liquids off-site for treatment. Both alternatives will probably then include the discharge of the the treated water to the Metro sewers and sewage treatment plants or other state waters. All requirements of the Metro pre-treatment permit or State NPDES permit will be met.

The Clean Water Act will also come into play with the disposal of stormwater after the site is cleared. If the site is graded and then covered with a clean and impermeable layer, the water may be discharged to Mill Creek as clean storm water, much as the water from the DOE paved portion is currently being discharged. The NPDES permit program is delegated to DOE. If the site is not covered (or if a particular drainage basin of the site is not covered) this water will either be ponded on the site or collected for treatment prior to discharge to Metro or surface water in compliance with the any Metro pre-treatment requirements or State NPDES permit.

RECOMMENDED ALTERNATIVE

The recommended alternative is cost-effective, i.e. the lowest cost alternative that is technologically feasible and reliable and which effectively mitigates and minimizes the damage to, and provides adequate protection of, public health, welfare or the environment. In this case, cost effectiveness includes the concept of being cost-effective for the overall site clean-up, not just the costs of this stage.

The recommended alternative is to follow the PRPs proposed plan. The main elements of this plan include:

1. Site preparation to provide for support and decontamination facilities.

2. Characterize all materials identified for removal.

3. Removal of all bulk liquids, drummed liquids, and waste piles to a permitted off-site facility. Negotiations among the PRPs may result in a large portion of the "synfuels" being incinerated in a cement kilm.

4. Removal and proper disposal of all transformers and substation equipment. Proper disposal will depend on the PCB levels in the transformers.

5. Demolition and removal of all on-site buildings.

6. Dismantling of all on-site bulk storage tanks. If tanks are determined to be structurally sound, such tanks will be thoroughly cleaned and sold for scrap metal.

7. All other surface debris will be removed and disposed.

8. Stormwater will be controlled and treated prior to discharge before, during, and after the surface clean-up. After initial pond removal, an on-site treatment plant will be set up and operated. The PRPs will continue to handle stormwater control until April 1, 1985.

The no action alternative is not acceptable, primarily because it will not mitigate and minimize the damage to, nor provide adequate protection of, public health, welfare, or the environment. It is also not acceptable because it would delay final site clean-up by at least a year because this material would have be removed before the next stage of clean-up could begin. Since surface clean-up requires an entire contruction season, there would have to be an additional year before sub-surface clean-up could begin..

The major problems with most other alternatives for the wastes are both regulatory compliance (in form or substance) and institutional feasibility. For example, recycling is not feasible if no recyclers will take the material because of their fear of future liability. Because of the local notoriety of the site, proving a substance from Western Processing is not hazardous and thus legally suitable to be disposed of in a municipal landfill is often more expensive and less reliable than simply disposing of the material in a hazardous waste landfill.

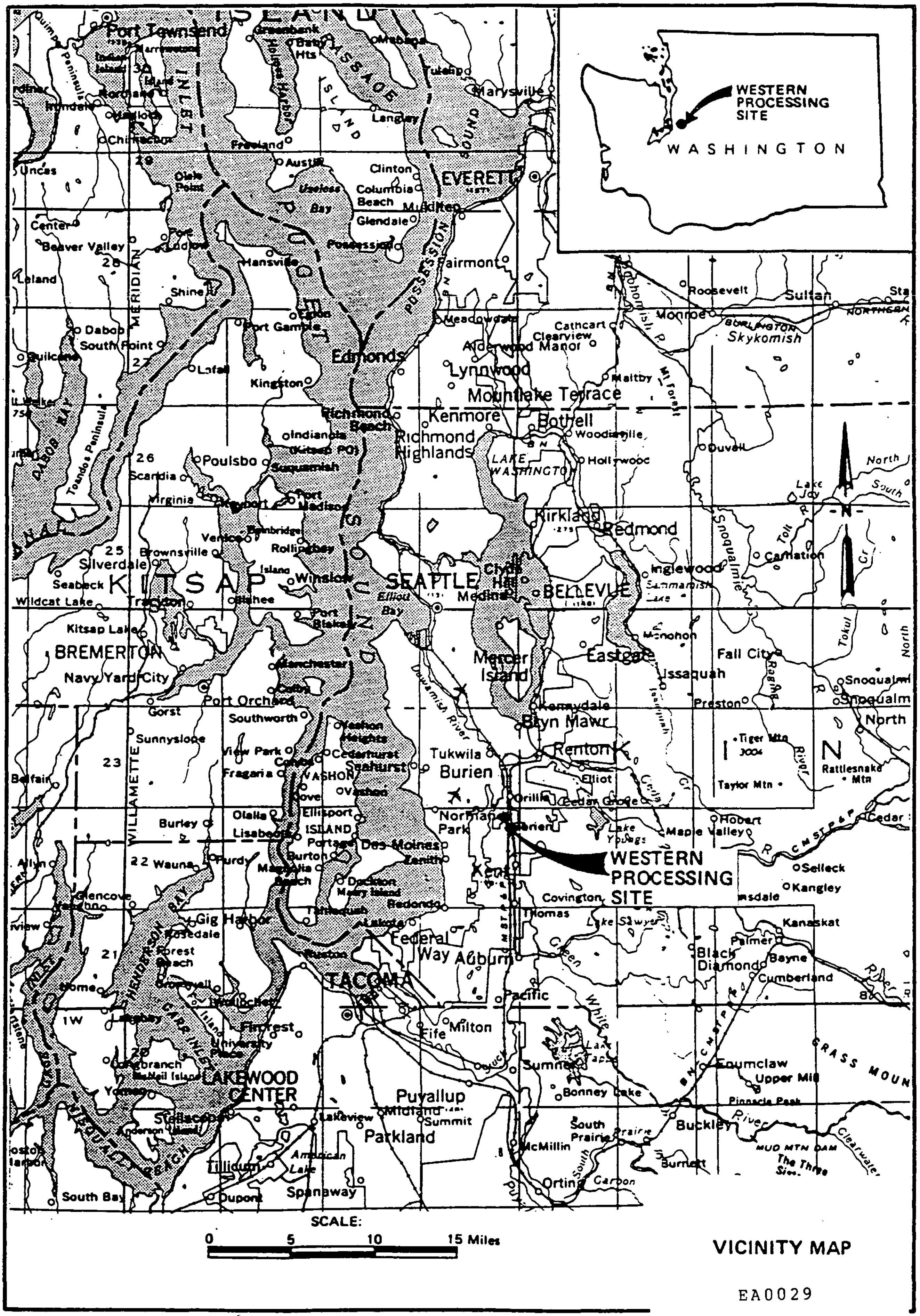
OPERATIONS AND MAINTENANCE

O&M will be necessary only for the stormwater control portion of the project. O&M activities will includes operation of the treatment plant, and monitoring the site's berms to ensure that there is no surface discharge. The PRPs will be responsible for all such O&M until April 1, 1984 or three months after they finish the site clean-up, whichever comes later. The PRPs are also responsible for leaving the ponds drained. Subsurface and off-site remidial actions are planned to begin next summer, and stormwater will have to managed as part of that activity.

FUTURE ACTIONS

This surface clean-up and stormwater control project is the first operable unit of the overall remedial action at this site. The draft RI/FS for the rest of the remedial actions (subsurface and groundwater alternatives, and off-site contamination and needs) will be available in September 1984. No information is currently available on what the possible feasibile alternatives will be, but a common element in all scenarios previous looked at (except for the no action alternative) included a complete surface clearance as a necessary first step. The data on the extent of off-site contamination is now just coming in. An extensive public comment period on this larger, and more controversial stage, is expected. Negotiations will be continuing with the PRPs throughout the surface clear-up project, and if necessary, into the fall.

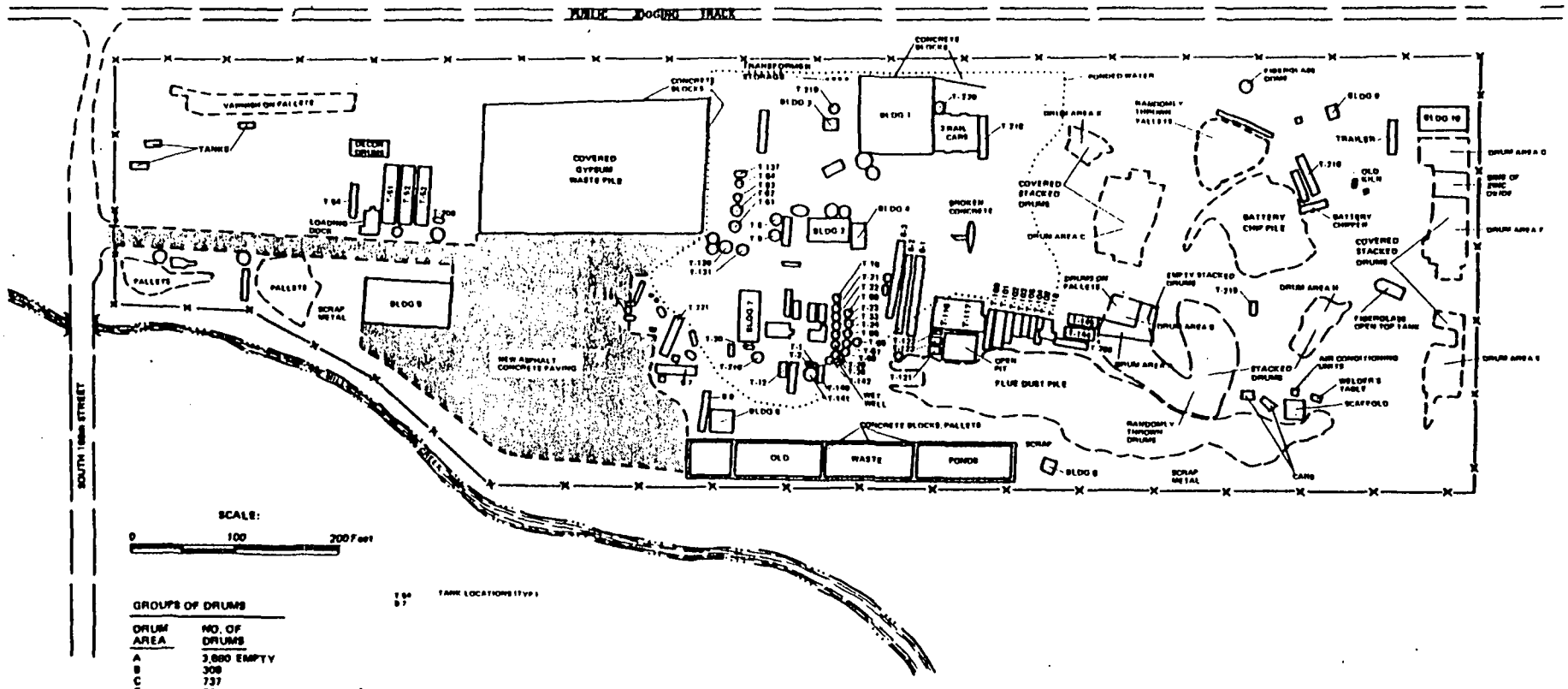
Figure 1



EA0029

Figure 2

EA0030



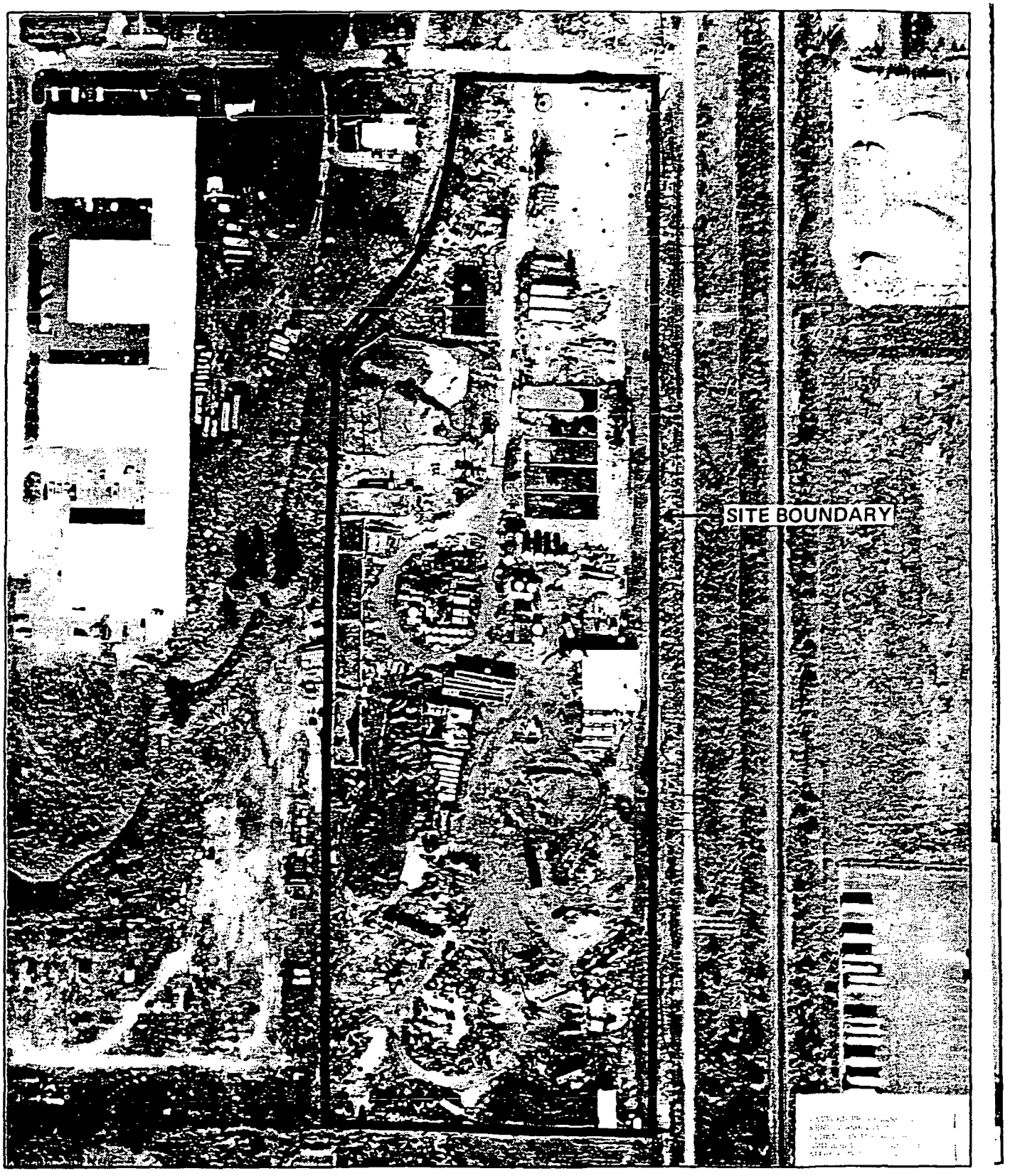
GROUPS OF DRUMS

DRUM AREA	NO. OF DRUMS
A	3,880 EMPTY
B	308
C	737
E	300
F	148
G	273
H	306
K	108

SOURCE: CH2M HILL RECONNAISSANCE, MAY, 1984

LOCATIONS OF WASTE MATERIALS, MAY 1984

Figure 3



WESTERN PROCESSING
IN OPERATION,
OCTOBER 1982

EA0031

Table 2

FOCUSED FEASABILITY STUDY
POTENTIAL REMEDIAL ALTERNATIVES AND TECHNOLOGIES

Disposal Alternative	Technologies Considered
1. Onsite Treatment	Carbon adsorption
	Air stripping
	Precipitation/filtration/ clarification
	Drying/dewatering
	Sedimentation
	Distillation
	Solidification
	Neutralization
	Evaporation
	Biological oxidation
	Chemical oxidation/reduction
	Rinsing/steam cleaning
	Chipping/crushing
	Liquid/liquid extraction
	Encapsulation
	Sludge conditioning (e.g., with fly ash)
2. Offsite Treatment	Same potential technologies as for onsite treatment
3. Nonhazardous Waste Landfill	Repackaging and/or onsite or offsite treatment may be required.
4. Hazardous Waste Landfill	Partial solidification of liquids and/or repackaging may be required.

Disposal Alternative	Technologies Considered
5. Discharge to Metro	Onsite or offsite pretreatment may be required. See the technologies for onsite treatment above.
6. Discharge to Mill Creek	Onsite pretreatment will likely be required to meet discharge limitations. See the technologies for onsite treatment above.
7. Incineration/Fuel Source	Hog fuel boiler (wood) Cement kiln Hazardous waste incinerator (e.g., at-sea incinerator) Industrial boilers (oil fired) Onsite portable boiler
8. Recycle or reuse	Steam clean onsite; cut, crush, chip, onsite; repackage onsite; salvage, sell, give away.
9. Detonation	--
10. Containment	Solidification, burial, crushing, chipping
11. Return to Manufacturer	--
12. Release to Responsible Party	--
13. No action	--

WESTERN PROCESSING SURFACE CLEARANCE PROJECT

Waste Type	Current Estimated Quantity	Disposal Alternatives: Most Likely Alternatives	Disposal Alternatives: Less Likely, but still Feasible Alternatives
A. Corrosive liquids	202,966 gallons	Onsite treatment and discharge to Metro Haul to offsite treatment facility	Haul to hazardous waste landfill
B. Sludge from corrosive tanks	20,190 gallons	Haul to hazardous waste landfill	Solidify and haul to hazardous waste landfill
C. Isopropyl alcohol mixture	Unknown	Onsite treatment and discharge to Metro	Haul to hazardous waste landfill
D. Flue dust	2,900 cubic yards	Haul to hazardous waste landfill Onsite use in final site closure	Onsite use as solidification agent, haul to hazardous waste landfill Release to generator of waste
E. Battery chips	2,100 cubic yards	Offsite recycle/reclaim	Haul to hazardous waste landfill Release to generator of waste
F. Zinc oxide	129 tons	Haul to hazardous waste landfill	
G. Foaming agent	2,690 gallons	Haul to hazardous waste landfill	Return to manufacturer Release to generator of waste
H. Wood pallets	80 tons	Haul to hazardous waste landfill	
I. Printing inks, tars, oils, and greases	20,300 gallons	Haul to hazardous waste landfill	Release to generator of waste
J. Tires	1 ton	Clean and sell/give away Steam clean, haul to municipal landfill	Haul to hazardous waste landfill
K. Nail coatings	3,000 gallons	Haul to hazardous waste landfill	
L. Unknowns	Unknown	Haul to hazardous waste landfill	Others, depending on characteristics

EA0034

Table 3

Waste Type	Current Estimated Quantity	Disposal Alternatives: Most Likely Alternatives	Disposal Alternatives: Less Likely, but still Feasible Alternatives
M. Transformers	5 to 10 tons	Haul to hazardous waste landfill	
		Offsite Incineration	
		Onsite or offsite treatment of liquids and recycles casings	
		Onsite drain and flush, incinerate liquids, haul casings to municpal landfill	
N. "Synfuels"			
1. 60-weight bunker oil	87,131 gallons	Haul to hazardous waste landfill	
		Reuse as fuel	
2. High arsenic content	235,104 gallons	Haul to hazardous waste landfill	
		Dilute and recycle for pressure creosoting	
3. Mixed liquids	53,476 gallons	Haul to hazardous waste landfill	
		Reuse as fuel	
4. Liquids with methylene chloride	128,065 gallons	Haul to hazardous waste landfill	
		Offsite treatment and recycle	
5. Caustic liquids	7,899 gallons	Haul to hazardous waste landfill	
		Reuse	
6. Unknowns	148,219 gallons	Same as above	
O. Gypsum pile	10,128 cubic yards	Haul to hazardous waste landfill	Haul to municipal landfill
P. Fluids in gypsum pile	Unknown	Onsite treatment and discharge to Metro	Haul to hazardous waste landfill
		Offsite treatment	
Q. Sludge from bottom of tanks	101,900 gallons	Haul to hazardous waste landfill	

EA0035

Waste Type	Current Estimated Quantity	Disposal Alternatives: Most Likely Alternatives	Disposal Alternatives: Less Likely, but still Feasible Alternatives
R. Tanks and scrap metal	Unknown	Steam clean, sell whole and/or cut and sell as scrap	Haul to hazardous waste landfill
S. Ponded water and decon water from operations	.5 million gallons (plus an estimated .5 million gallons from clearance activities)	Onsite treatment and discharge to Metro	Haul to hazardous waste landfill
		Offsite treatment	
T. Nonrecyclable solvents	3,650 gallons	Haul to hazardous waste landfill	Solidify and haul to hazardous waste landfill
U. Crystallized solids	56,720 cubic feet	Haul to hazardous waste landfill	
		Others, depending on nature of material	
V. Laboratory chemicals	Unknown	Haul to hazardous waste landfill	
		Explosives must be detonated	
W. Pesticides	5 to 7 tons	Haul to hazardous waste landfill	
X. Paint waste, varnishes, and stains	30,000 to 50,000 gallons	Haul to hazardous waste landfill	
Y. Flammable liquids	10,000 gallons	Haul to hazardous waste landfill	Solidigy and haul to hazardous waste landfill
Z. Concrete blocks	8,937 cubic feet	Steam clean and use onsite in final closure	
		Haul to hazardous waste landfill	
AA. Demolition debris	Unknown	Haul to hazardous waste landfill	
		Steam clean and recycle (metal tools and equipment only.)	
		Steam clean and haul to municipal landfill (metal tools and equipment only.)	
BB. Empty drums	6,000 drums	Haul to hazardous waste landfill, crushed onsite Recycle	Haul to hazardous waste landfill as is